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PROMENTUM™

QUAD AMC CARRIER

INSTALLATION GUIDE

ATCA-1200

This document describes how to install and to set up the Promentum™ ATCA-1200 Quad Advanced Mezzanine Card (AMC) carrier.

Follow ESD precautions

During installation, follow proper electrostatic discharge procedures when handling the carrier and electrical equipment.

WARNING!

- This product contains static-sensitive components and should be handled with care. Failure to employ adequate antistatic measures can cause irreparable damage to components.
- Handle this product only when wearing a grounded wrist strap at a grounded work area. Additional precautions and ESD information are provided at www.radisys.com/esd.
- Do not remove the carrier from its ESD shielding bag until a step instructs you to do so. Failure to follow ESD precautions may cause hardware damage.

Prepare for installation

Installation of the carrier requires the following:

- An AdvancedTCA® (ATCA®) shelf, such as a RadiSys ATCA-6000 or ATCA-6006 shelf
- Adequate ventilation for the shelf

To access the carrier through an external computer, you may need the following:

- An optional rear transition module (RTM) designed for the carrier
- A 9-pin D-shell to RJ-45 serial port cable
- A standard crossover Ethernet cable

Install AMCs

AMCs are typically pre-installed in the carrier at the factory.

Note: If you are installing your own AMCs, verify they are compatible with the carrier and listed with UL. Check the specified requirements for form factor, power, cooling, and connectors in the *ATCA-1200 Quad AMC Carrier Reference* and in the documentation that came with the AMCs. Follow ESD precautions when installing AMCs on the carrier (see information above).

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Install the RTM (optional)

An RTM designed for the carrier can be used for I/O access. The RTM can be installed at any time, but it is easier to do so before installing the carrier in the shelf. This section describes the RTM being installed before the carrier.

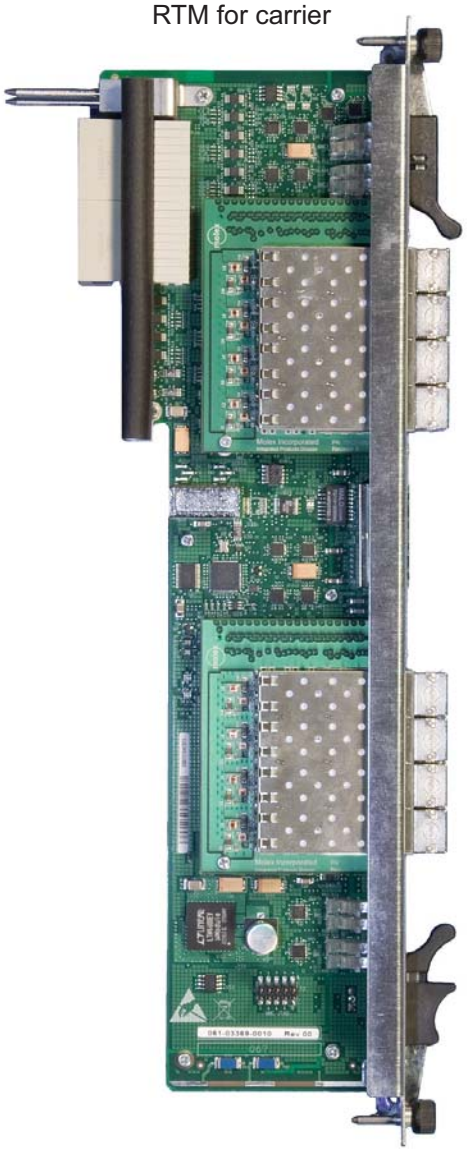
Preparation

Before installing the RTM:

- Verify it is compatible with the carrier.
- Follow ESD precautions. See page 1 for more information.
- Determine which front node slot in the shelf you plan to use for the carrier. The RTM will be installed in the corresponding rear slot. For example, if you intend to install the carrier in front physical slot number 3, install the RTM in rear physical slot number 3.
- Remove the airflow management panel installed in the rear node slot.

Note: If you are using another vendor's RTM, check the RTM's documentation for installation instructions or precautions.

RTM for carrier



Installation

1. Follow ESD precautions and make sure you are adequately grounded before handling the RTM.
2. Remove the RTM from its antistatic bag.
3. Open both ejector latches on the RTM.
4. Slide the RTM into the empty rear slot on the shelf.
5. Close both ejector latches. Push in the thumbscrews and tighten.
6. Install the carrier (see below).
7. After installing the carrier, verify the RTM's power LED is green (the RTM gets its power through the front module).
8. Use the shelf management software to verify the RTM and the corresponding front module are available as resources and operating correctly.

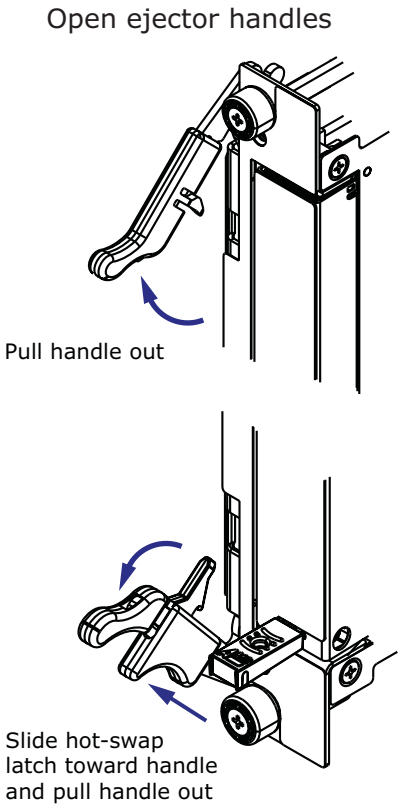
Install the carrier

1. This section assumes you are installing the carrier in an ATCA shelf and the shelf power is on. The ATCA shelf architecture lets you insert and remove the carrier from the shelf without powering down the system.
2. Follow ESD precautions and make sure you are adequately grounded before handling the carrier (see page 1).

3. Remove the carrier from its antistatic bag.
4. Open both ejector handles outward at the same time.
5. Slide the carrier into one of the node slots on the shelf. If correctly aligned, the edges of the carrier will fit within the narrow guide rails of the shelf and the carrier will mate with the alignment receptacles of the corresponding compatible RTM (if one is installed).
6. Once the carrier is inserted all the way into the shelf, simultaneously close both ejector latches inward. This will seat the carrier's connectors into the shelf's backplane.

   The hot-swap (H/S) LED flashes until the carrier is fully powered (see *Front panel LED indicators* below). Once powered, the H/S LED will turn off and the Power LED will become green.

   If the H/S LED remains solid blue or keeps flashing after the carrier is inserted, it indicates the installation may have failed. Please see the *ATCA-1200 Quad AMC Carrier Reference* for information on troubleshooting LED states.
7. Secure the carrier in its slot by hand tightening the two fastening screws on each end of the carrier's front panel.
8. If the optional RTM is installed, verify the RTM's power LED is green.
9. Use the shelf management software to verify the carrier and the RTM are available as resources and are operating correctly.



Front panel LED indicators

Label	LED	Definition	Color	States
OOS	LED 1	Out of service		Red or amber = Out of service Off = Normal operation
PWR	LED 2	Power		Amber = Application defined Green = Power good
APP	LED 3	Application		Amber = Application defined Green = Application defined
H/S	H/S	Hot swap		Long blink = Searching for Shelf Manager Solid blue = Ready for hot swap Short blink = Preparing for removal Off = Normal operation

Connect to an external computer and the network

Connect to an external computer and the network using one of these methods:

- with the optional RTM designed to mate with the carrier
- with Telnet or SSH via the backplane Ethernet interfaces

Connect with the RTM

This section assumes you have installed the optional RTM as described on page 2.

The Quad AMC carrier can be accessed by an external computer through the serial and the Ethernet maintenance ports on the RTM. Use the serial port to perform diagnostic and verification procedures. Use the Ethernet maintenance port to connect the carrier to the network and to perform configuration procedures.

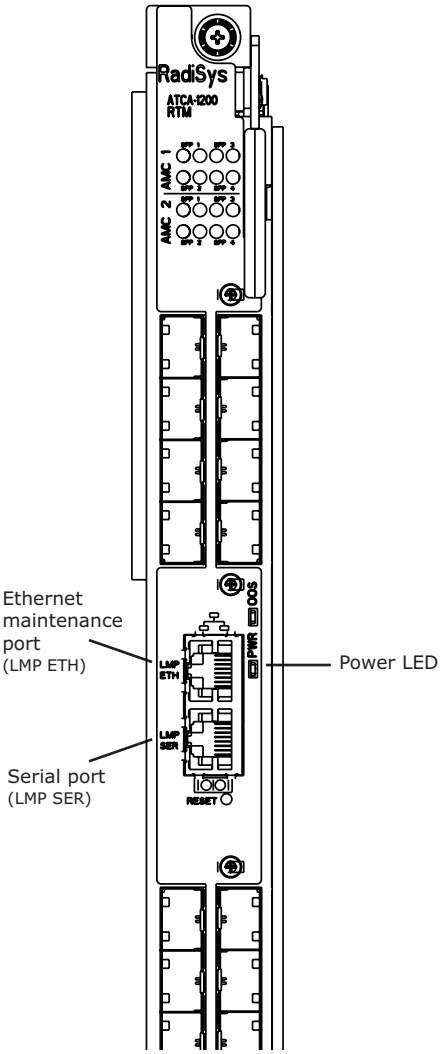
Connect to the serial port

1. Connect the serial port cable by plugging one end into the RJ-45 serial port (labeled "LMP SER") on the RTM. For a description of the serial port cable pinouts, see the *ATCA-1200 Quad AMC Carrier Reference*.
2. Connect the cable's other end to the COM1 or the COM2 serial port of an external computer, such as a laptop.
3. Start a terminal-emulator application, such as Procomm Plus® or minicom, from the operating system on your computer or laptop. Specify 115200 baud, 8 data bits, no parity, one stop bit, and no hardware or software flow control.
4. Press the Enter key to get the `ATCA-1200 login` prompt.

   If the `ATCA-1200 login` prompt does not display, check the cabling and verify the terminal-emulator settings are correct. You can also check the LED states on the carrier. If necessary, press the reset button and see if any text is displayed. If text is displayed, it may provide some hints as to what else to check.
5. Enter **`admin`** at the prompt.
6. Verify that you receive a welcome message and a prompt showing `ATCA-1200#`. From this prompt you can perform diagnostic and verification procedures.

   To log off the carrier at any time, enter the **`exit`** command. See the *ATCA-1200 Quad AMC Carrier Reference* for information on diagnostic and verification procedures.
7. Disconnect the serial port cable from the RTM when you are through performing the diagnostic and verification procedures.

RTM front panel



Connect to the Ethernet maintenance port

1. Connect a crossover Ethernet cable between the RJ-45 Ethernet maintenance port (labeled LMP ETH) on the RTM and the RJ-45 Ethernet port on a Linux host computer that is connected to your network.
2. Configure the host computer to a subnet IP address of 10.0.0.x. For the "x" variable, select a value from the range 2-254 (for example, 10.0.0.2 to 10.0.0.254). Set the netmask to 255.255.255.0.
3. From the host computer, use a Telnet or an SSH connection to access the carrier's default IP address 10.0.0.1 (port 23). The `ATCA-1200 login` prompt for the carrier will display.

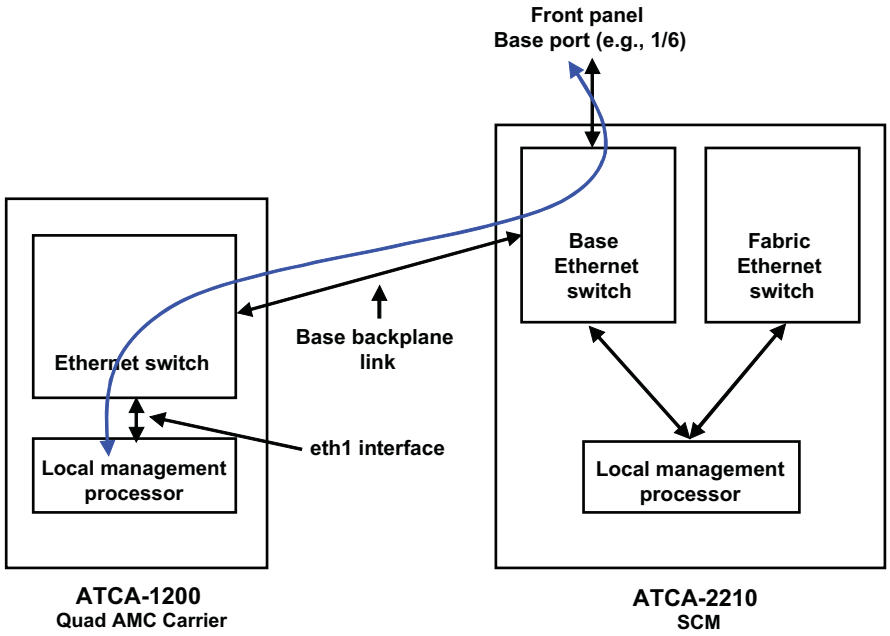
   If the `ATCA-1200 login` prompt does not display, verify the Telnet connection to the carrier's IP address is correct.
4. Log in as **`admin`** to get the `ATCA-1200#` prompt. From this prompt you can perform configuration procedures. To log off the carrier at any time, enter the **`exit`** command.

   Note: To connect to the Linux shell on the carrier, use either a serial port or a Telnet connection. After connecting, log in as **`root`** and enter **`ifconfig`** to view eth0 configuration settings.
5. Disconnect the Ethernet cable from the RTM when you are through performing the configuration procedures.

Connect with Telnet or SSH via the backplane Ethernet interfaces

1. Connect a crossover Ethernet cable between the RJ-45 Ethernet port on a module that has access to the Base Ethernet interface and the RJ-45 Ethernet port on a Linux host computer that is connected to your network. Examples of modules that have access to the Base Ethernet interface include CPU modules and switch and control modules (like the RadiSys ATCA-2210 SCM).

   For example, if the ATCA-2210 SCM is installed on the shelf, you can connect to the Base Ethernet SFP port (e.g. port 1/6) on the front panel.



2. Configure the IP address of the host computer using the following: 10.2.<chassis>.x.

   The <chassis> parameter represents the shelf address (the physical location of the shelf within a central office).

   For the "x" variable, select a value from the range 17-254 (for example, 10.2.<chassis>.17 to 10.2.<chassis>.254). Set the subnet to 255.255.0.0 for the eth1:0 interface.

3. From the host computer use a Telnet or an SSH connection to access the eth1:0 interface on the carrier. The static IP address is: 10.2.<chassis>.<slot>.

   The <chassis> parameter represents the shelf address and the <slot> parameter represents the carrier's location in the shelf.

   The ATCA-1200# login prompt for the carrier will display. If the prompt does not display, verify the Telnet or the SSH connection to the static IP address is correct.

4. Log in as **admin** to get the `ATCA-1200#` prompt. From this prompt you can perform configuration procedures. To log off the carrier at any time, enter the **exit** command.

   Note: To connect to the Linux shell on the carrier, log in as **root** and enter **ifconfig** to view eth1 configuration settings.

5. Disconnect the Ethernet cable from the Base Ethernet port on the module through when you are done performing the configuration procedures.

Verify Ethernet switch operation

Use these steps to view port status and to enable ports on the Ethernet switch.

View port status

1. Verify you are at this prompt.

   ```
   ATCA-1200#
   ```

   If you are not at the appropriate prompt, see *Connect to an external computer and the network* on page 4 for instructions on how to get there.

2. Enter this command to access the Ethernet command line interface.

   ```
   ethernet
   ```

   This results in the `ATCA-1200-Eth#` prompt.

3. Enter this command to show the status of the ports.

   ```
   show port all
   ```

   View the status information of the ports to see which ports are enabled. If needed, press the space bar to view more of the list.

   By default, Base port 0/1 is enabled.

4. Proceed to the applicable section or step:

   - To change which port is enabled, see *Change the enabled port* on page 7.
   - To keep the default settings, continue with step 5.

5. Enter the **exit** command to return to the ATCA-1200# prompt.

   If you are asked to save changes, enter **y** for *yes* or **n** for *no*. If you choose **y** for *yes*, this configuration will be saved as the startup configuration.

6. Enter the **exit** command to log off the carrier. If you are connected to the carrier using the RTM, disconnect the cable from the serial port or the Ethernet maintenance port on the RTM.

Change the enabled port

Note: RadiSys recommends only having one port enabled at a time on the carrier if the platform configuration has two switches with interconnected switching domains. A connection between the Base Ethernet switching domains is enabled by default on RadiSys switches.

1. Verify you are at this prompt.

   ```
   ATCA-1200-Eth#
   ```

   If you are not at the appropriate prompt, see *Connect to an external computer and the network* on page 4 for instructions on how to get there.

2. Follow these steps to enable a specific port (other than the default port of 0/1):

   A. Enter this command.

   configure

   B. Enter the specific port (interface) number to enable. The *s* variable represents the specified slot or bay. The *p* variable represents an individual port within the group of ports for the specified slot or bay.

   interface <*s/p*>

   Where *s* and *p* have the following values.

ATCA-6000 backplane slots	s=0	p=1-4
ATCA-6006 backplane slots	s=0	p=1-4
AMC ports	s=1-4	p=1-5
Internal ports	s=5	p=1-2
RTM	s=6	p=1-2

   C. Enter this series of commands to enable the port.

   a. **no shutdown**

   b. **exit**

3. Follow these steps to disable the default port of 0/1.

   A. Enter this command.

   configure

   B. Enter the port number to disable. For the default port, this number is 0/1.

   interface 0/1

   C. Enter the next two commands to disable the specified port.

   a. **shutdown**

   b. **exit**

D. Enter the next two commands to return to the `ATCA-1200#` prompt.
   a. **`exit`**
   b. **`exit`**

   If you are asked to save changes, enter **`y`** for *yes* or **`n`** for *no*. If you choose **`y`** for *yes*, this configuration will be saved as the startup configuration.

4. Enter the **`exit`** command again, to log off the carrier. If you are connected to the carrier using the RTM, disconnect the cable from the serial port or the Ethernet maintenance port on the RTM.

Where to go from here

See the *ATCA-1200 Quad AMC Carrier Reference* for detailed information on the carrier's electrical, mechanical, environmental, and software aspects. Additional software information is covered in the *Ethernet Switching Software Reference.*

You should also set passwords for the `root` and the `admin` users and create user accounts for those who do not require administrative privileges. See the *ATCA-1200 Quad AMC Carrier Reference* for more information.

Where to get more product information

Please visit the RadiSys Web site at www.radisys.com for product information and other resources. Downloads (manuals, release notes, software, etc.) are available via the Technical Support Library product links at www.radisys.com/support or the product pages at www.radisys.com/products.